

eolf-seql
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<130> P6031289pct

<150> EP10190705.3

<151> 2010-11-10

<150> US61/412,034

<151> 2010-11-10

<160> 47

<170> PatentIn version 3.3

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<212> PRT

<213> Artificial

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<223> protein AAP

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Gly Val Thr Ala Ser Ala Ala Gly Asp Ala Ala Pro Ala Ala Ala Ala
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Ala Lys Lys Asp Glu Pro Glu Glu Glu Ala Asp Asp Asp Met Gly Pro
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Ser Arg Val Asp Pro Met Gln Tyr Leu Ala Ala Tyr Ala Leu Val Ala
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Met Ser Gly Lys Thr Pro Ser Lys Ala Asp Val Gln Ala Val Leu Lys
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Ala Ala Gly Val Ala Val Asp Ala Ser Arg Val Asp Ala Val Phe Gln
145 150 155 160

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Lys Leu Val Gly Ser Gly Ser Ala Ala Pro Ala Gly Ala Val Ser Thr
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Glu Glu Glu Glu Ala Asp Asp Asp Met Gly Pro Val Asp Leu Gln Pro
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<213> Leishmania infantum

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Leu Ser Val Lys Ala Ala Ala Gln Ser Gly Lys Lys Arg Cys Arg Leu
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Asn Pro Arg Thr Val Met Leu Ala Ala Arg His Asp Asp Asp Ile Gly
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Ala Ala Ser Ile Val Arg Ala Asn Lys Lys Arg Thr Leu Gly Ala Arg
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Phe Gln Lys Ser Thr Ser Leu Leu Ile Gln Cys Ala Pro Phe Gln Arg
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Leu Val Arg Gly Val Glu Arg Gln Lys Glu Gly Leu Arg Phe Gln Ser
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Ser Ala Ile Met Ala Leu Gln Glu Ala Thr Glu Ala Tyr Ile Val Ser
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Val Tyr Glu Glu Val Arg Arg Val Leu Lys Ala Tyr Val Glu Asp Ile
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Lys Arg Ala Gln Ala Lys Asp Ala Ser Pro Glu Ala Lys His Phe Asn
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Asp Gln Cys Glu Glu Tyr Asn Leu Leu Ser Gly Asn Thr Gly Leu Ile
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Phe Thr Asn Asn Ala Val Gln Glu Ile Thr Ser Val Leu Asp Ala His
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Arg Val Lys Arg Ala Ala Arg Val Gly Ala Ile Ser Pro Cys Asp Val
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Ile Val Ala Ala Gly Ser Thr Gly Met Glu Pro Thr Gln Thr Ser Phe
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Phe Gln Ala Leu Asn Ile Ala Thr Lys Ile Ala Lys Gly Met Val Glu
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Ile Val Thr Glu Lys Lys Val Leu Ser Val Gly Asp Lys Val Asp Asn
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Ser Thr Ala Thr Leu Leu Gln Lys Leu Asn Ile Ser Pro Phe Tyr Tyr
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Gln Val Asn Val Leu Ser Val Trp Asp Arg Gly Val Leu Phe Thr Arg
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Glu Asp Leu Met Met Thr Glu Asp Met Val Glu Lys Met Leu Met Glu
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Gly Leu Ser Asn Val Ala Ala Met Ala Leu Gly Ala Gly Ile Pro Thr
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Ala Val Ser Val Ala Thr Ser Tyr Glu Phe Glu Glu His Asn Gly Lys

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260

265

270

Glu Leu Arg Glu Ala Ala Ile Asn Gly Leu Leu Ala Gly Ser Cys Ser
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eolf-seql

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His Pro Tyr Lys Phe Arg Arg Val Lys Glu Leu Met Val Ala Pro Glu
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Gly Met Phe Thr Gly Gln Ser Val Phe Cys Gly Gln Lys Ala Pro Leu
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Ala Ile Gly Asn Val Leu Pro Leu Gly Gln Ile Thr Glu Gly Cys Ile
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Val Cys Asn Val Glu Ala Lys Pro Gly Asp Arg Gly Thr Leu Ala Arg
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Ala Ser Gly Asp Tyr Cys Ile Ile Ile Ser His Asn His Glu Thr Gly
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Arg Thr Arg Leu Lys Leu Pro Ser Gly Gln Lys Lys Ser Val Pro Ser
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Thr Ser Arg Ala Met Ile Gly Ile Ile Ser Gly Gly Gly Arg Ile Glu
165 170 175

eolf-seql

Lys Pro Val Leu Lys Ala Gly Asn Ser Phe Tyr Arg Phe Arg Gly Lys
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Arg Asn Cys Trp Pro Lys Val Arg Gly Val Ala Arg Asn Pro Val Glu
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His Pro His Gly Gly Gly Asn His Gln His Ile Gly His Pro Ser Thr
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eolf-seql

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						Val
						Val
						Ala
						Arg
						Lys
						Ala
						Ala
						Lys
						Tyr
						Ser
						Arg
						Glu
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						Arg
						Ala
						Arg
						Lys
						Tyr
						Ser
						Arg
						Glu
Tyr	Arg	Gly	Ala	Glu	Lys 70	Lys
65						Leu
						Val
						Thr
						Leu
						Arg
						Arg
						Gln
						Ala
						Ala
						Ala
Ser	His	Gly	Asn	Tyr 85	Tyr	Leu
						Glu
						Ala
						Lys
						Pro
						Lys
						Val
						Ala
						Val
						Val
						Val
Thr	Arg	Ile	Arg 100	Gly	Ile	Ala
						Lys
						Val
						Asn
						Pro
						Lys
						Gln
						Arg
						Lys
						Ile
						Ile
Leu	Gln	Leu 115	Leu	Arg	Leu	Arg
						Gln
						Ile
						Phe
						Asn
						Thr
						Val
						Phe
						Val
						Lys
Met	Asn 130	Lys	Pro	Met	Glu	Asn
						Met
						Leu
						Arg
						Ala
						Val
						Glu
						Pro
						Tyr
						Ile
Ala	Tyr	Gly	Tyr	Pro	Ser 150	Leu
145						Ala
						Thr
						Val
						Arg
						Ala
						Met
						Val
						Tyr
						Lys
Arg	Gly	Tyr	Leu	Lys 165	Ile	Asn
						Gly
						Gln
						Arg
						Val
						Lys
						Ile
						Thr
						Asp
						Asn
Gln	Met	Ile	Lys 180	Asp	Lys	Tyr
						Asn
						Asn
						Val
						Asp
						Ile
						Val
						Cys
						Ala
						Glu
Asp	Met	Val 195	Asn	Gln	Ile	Tyr
						Thr
						Cys
						Gly
						Lys
						His
						Phe
						Arg
						Thr
						Val
Thr	His 210	Gly	Met	Trp	Pro	Phe
						Lys
						Leu
						Ala
						Pro
						Pro
						Ala
						Gly
						Gly
						Met
Arg	Gln	Lys	Arg	Arg	His 230	Phe
225						Val
						Glu
						Gly
						Gly
						Asp
						Tyr
						Gly
						Asn
						Arg
Asp	Thr	Leu	Ile	Asn 245	Arg	Phe
						Leu
						Ala
						Arg
						Met
						Ile

<210> 16
 <211> 759
 <212> DNA
 <213> Leishmania major

eolf-seql

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<400> 16
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gtggccagaa aggctgccaa ggctgccctg aagaagaccg cctacctgcg tgcccgcaaa      180
tactcccgcg agtaccgcgg tgcggagaag aagctggtga cgctgcgccg ccaggccgcc      240
tctcacggta actactacct ggaggcgaag ccgaagggtg ccgtggtgac tcgcatccgc      300
ggtatcgcca aggtgaaccc gaagcagcgc aagattcttc agttgctgcg cctgcgccag      360
atcttcaaca cgggtgtttgt gaagatgaac aagccgatgg agaacatgct gcgtgcggtg      420
gagccctaca tcgcgtacgg ctacccgtcc ctggccaccg tccgcgcgat ggtgtacaag      480
cgcggctacc tgaagatcaa cggccagcgc gtgaagatca ccgacaacca gatgatcaag      540
gataagtaca acaacgtgga cattgtgtgt gccgaggata tggatgaacca gatctacacc      600
tgcggaagc acttccgcac ggtgacgcac ggcattgtggc ctttcaagct ggcccctccg      660
gccggtggca tgcgccagaa gcgccgtcac ttcgtggagg gtggcgacta tggtaaccgc      720
gacaccttga tcaaccgctt cctcgcccgc atgatctga      759

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<210> 17
<211> 264
<212> PRT
<213> Leishmania major

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<400> 17

Met Pro Gly Lys Glu Val Lys Lys Val Thr Gln Pro Ala Lys Ala Ala
1 5 10 15

Ser Pro Tyr Lys Lys Pro Ala Val Ala Ser His Phe Ala Ala Arg Pro
20 25 30

Lys Asn Phe Gly Ile Gly Gln Asp Val Pro Tyr Ala Arg Asp Leu Ser
35 40 45

Arg Phe Met Arg Trp Pro Thr Phe Val Thr Met Gln Arg Lys Lys Arg
50 55 60

Val Leu Gln Arg Arg Leu Lys Val Pro Pro Ala Leu Asn Gln Phe Thr
65 70 75 80

Lys Val Leu Asp Arg Ala Ser Arg Asn Glu Ala Leu Lys Leu Ile Lys
85 90 95

Lys Tyr Ala Pro Glu Thr Arg Lys Ala Arg Arg Glu Arg Leu Gln Lys
100 105 110

Val Ala Glu Glu Lys Lys Lys Asp Pro Lys Lys Thr Val Ser Thr Lys
115 120 125

Ala Pro Leu Ala Val Val Thr Gly Leu Gln Glu Val Thr Arg Ala Ile

eolf-seql 140

130

135

Glu Lys Lys Gln Ala Arg Met Val Val Ile Ala Asn Asn Val Asp Pro
145 150 155 160

Val Glu Leu Val Leu Trp Met Pro Asn Leu Cys Arg Ala Asn Lys Ile
165 170 175

Pro Tyr Ala Ile Val Lys Asp Met Ala Arg Leu Gly Asp Ala Ile Gly
180 185 190

Arg Lys Thr Ala Thr Cys Val Ala Leu Thr Asp Val Asn Ala Glu Asp
195 200 205

Glu Ala Thr Leu Lys Asn Leu Ile Arg Ser Val Asn Ala Arg Phe Leu
210 215 220

Ser Arg Ser Asp Val Ile Arg Arg Gln Trp Gly Gly Leu Gln Leu Ser
225 230 235 240

Leu Arg Ser Arg Ala Glu Leu Arg Lys Lys His Ala Arg Asn Ala Gly
245 250 255

Val Asp Ala Ala Ala Ile Ile Gln
260

<210> 18
<211> 795
<212> DNA
<213> Leishmania major

<400> 18
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aagcccgccg ttgcgtcgca tttcgcgcc cgcccgaaga acttcggtat tggccaggat 120
gtgccgtacg cgcgtgacct gtcccgcttc atgcggtggc cgacgttcgt gacgatgcag 180
cgcaagaagc gcgtgctgca gcgccgctg aaggtgccgc cggcgctgaa ccagttcacg 240
aaggtgctgg accgcgcgag ccgaaacgag gcgctgaagc tgattaagaa gtacgcgccg 300
gagacccgca aggtcgccg cgagcgctg cagaaggttg ccgaggagaa gaagaaggac 360
ccgaagaaga cggtatcgac gaaggtccc ctggctgttg tgaccggtct gcaggaggtg 420
acgcgcgcga tcgagaagaa gcaggtcgc atggttgta tcgcaacaa cgtggaccct 480
gtggagctcg tgctgtggat gccgaacctg tgccgcgcga acaagatccc gtatgccatc 540
gtgaaggaca tggcgcgcct gggcgatgcg atcgggcgga agacggcgac gtgcgttgcg 600
ctcaccgacg tgaacgccga ggatgaggcg acgctgaaga acctgatccg ctccgtgaac 660
gctcgcttct tgtcccgctc ggacgtgatc cgccgccagt ggggtggtct gcagctgtct 720
ctgcgatccc gcgcggagct gcgcaagaag catgcccgca acgctggtgt ggacgccgcg 780
gccatcatcc agtaa 795

eolf-seql

<210> 19
 <211> 222
 <212> PRT
 <213> Leishmania major

<400> 19

Met Ala Phe Pro Ser Arg Lys Asp Ala Phe Arg Ala Gln Arg Lys Gly
 1 5 10 15

Ala Lys Lys His Arg Pro Glu Ile Ile Val Ile Asp Leu Lys Asp His
 20 25 30

Val Leu Gly Arg Ala Ala Ala Val Val Ala Lys Gln Leu Leu Leu Gly
 35 40 45

Lys Lys Ile Thr Val Val Arg Cys Glu Gln Leu Asn Ile Ala Gly Thr
 50 55 60

Glu Ile Arg Asn Lys Ile Lys Tyr Leu Gln Tyr Leu Arg Lys Arg Lys
 65 70 75 80

Leu Thr Asn Pro Thr Lys Gly Pro Phe His His Arg Ala Pro Ser Asp
 85 90 95

Val Phe Val Arg Thr Val Arg Ser Met Leu Pro Arg Tyr Thr Lys Arg
 100 105 110

Gly Met Lys Ala Leu Asn Ser Leu Val Ala Tyr Glu Gly Ile Pro Pro
 115 120 125

Asn Val Val Arg Thr Gly Gly Arg Val Val Ile Pro Arg Ala Gln Arg
 130 135 140

His Val Cys Tyr Arg Ser Glu Arg Pro Tyr Thr Val Leu Gly Asn Met
 145 150 155 160

Cys Lys His Val Gly Trp Lys Tyr Ser Asp Val Val Ala Asn Leu Glu
 165 170 175

Lys Ala Arg Val Glu Lys Ala Ser Arg His His Glu Lys Gln Ala Lys
 180 185 190

Leu Arg Asp Ala Trp Lys Ser Ala Arg Lys Glu Ala Leu Ala Lys Met
 195 200 205

Pro Lys His Asn Val Glu Val Leu Lys Lys Phe Gly Tyr Ala
 210 215 220

<210> 20
 <211> 669
 <212> DNA

eolf-seql

<213> Leishmania major

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<400> 20
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cgccccgaga tcatcgtgat cgacctgaag gatcacgtgc ttggtcgcgc ggcggctgtg    120
gttgccaagc agctgctcct gggtagaag atcaccgtgg tgcgctgcga gcagctcaac    180
attgccggta cggagatccg caacaagatc aagtacctgc agtacctgcg caagcggaag    240
ctgacgaacc ccacaaaggg tcccttccac caccgtgccc cgtccgacgt gtttgtccgc    300
actgtgcgca gcatgctgcc ccggtacacg aagcgcgga tgaaggcgct taactcgctg    360
gtggcctacg aggggaattcc gcccaacgtg gtgcgcacgg gcggggcgct ggtgatcccg    420
cgcgcccagc gccatgtgtg ctaccgctcg gagcgctcctt acacagtgtg cggcaacatg    480
tgcaagcacg tgggctggaa gtacagcgac gtcgtcgcca atctcgagaa ggctcgctg    540
gagaaggcgt cccgccacca cgaaaagcag gcgaagcttc gcgacgctg gaagtcggcc    600
cgcaaggagg cgctcgccaa gatgcccaag cacaacgtgg aggtgctgaa gaagtttggc    660
tacgcgtag                                         669

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<210> 21
 <211> 273
 <212> PRT
 <213> Leishmania major

<400> 21

Met Ala Lys Lys His Leu Lys Arg Leu Tyr Ala Pro Lys Asp Trp Met
 1 5 10 15

Leu Ser Lys Leu Thr Gly Val Phe Ala Pro Arg Pro Arg Pro Gly Pro
 20 25 30

His Lys Leu Arg Glu Cys Leu Pro Leu Leu Val Ile Ile Arg Asn Arg
 35 40 45

Leu Lys Tyr Ala Leu Asn Ala Arg Glu Gly Glu Met Ile Leu Arg Gln
 50 55 60

Gly Leu Val His Val Asp Asn His Pro Arg Arg Asp Gly Lys Tyr Pro
 65 70 75 80

Ala Gly Phe Met Asp Val Val Glu Ile Pro Lys Thr Gly Asp Arg Phe
 85 90 95

Arg Leu Met Tyr Asp Val Lys Gly Arg Phe Ala Leu Val Asn Leu Ser
 100 105 110

Glu Ala Glu Ala Gln Ile Lys Leu Met Lys Val Val Asn Leu Tyr Thr
 115 120 125

Ala Thr Gly Arg Val Pro Val Ala Val Thr His Asp Gly His Arg Ile

eolf-seql
140

130

135

Arg Tyr Pro Asp Pro His Thr Ser Ile Gly Asp Thr Ile Val Tyr Asn
145 150 155 160

Val Lys Glu Lys Lys Cys Val Asp Leu Ile Lys Asn Arg Gln Gly Lys
165 170 175

Ala Val Ile Val Thr Gly Gly Ala Asn Arg Gly Arg Ile Gly Glu Ile
180 185 190

Val Lys Val Glu Cys His Pro Gly Ala Phe Asn Ile Ala His Leu Lys
195 200 205

Asp Ala Ser Gly Ala Glu Phe Ala Thr Arg Ala Ala Asn Ile Phe Val
210 215 220

Ile Gly Lys Asp Leu Asn Asn Leu Gln Val Thr Val Pro Lys Gln Gln
225 230 235 240

Gly Leu Arg Met Asn Val Ile Gln Glu Arg Glu Glu Arg Leu Ile Ala
245 250 255

Ala Glu Ala Arg Lys Asn Ala Pro Ala Arg Gly Ala Arg Arg Ala Arg
260 265 270

Lys

<210> 22
<211> 822
<212> DNA
<213> Leishmania major

<400> 22
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accggcgtgt tcgcgccgcg tccgcgtccg ggtccgcaca agctgcgcga gtgcctgccg 120
ctgctggtga tcatccgcaa ccggctgaag tacgcgtga acgcgcgcga gggtagatg 180
atcctgcgcc agggctctgt gcacgtggac aaccacccgc gccgcgacgg caagtatccc 240
gccggtttca tggacgtggt cgagatcccg aagacgggcg accgcttccg cctgatgtac 300
gacgtcaagg gccgcttcgc gttggtgaac ctgtccgagg cggaggcgca gatcaagctg 360
atgaaggttg tgaacctgta cacggccacc ggccgcgtgc cggtcgctgt gacgcacgac 420
ggccaccgca tccgctaccc ggaccgcac acctccattg gtgacaccat cgtgtacaac 480
gtcaaggaga agaagtgcgt ggacctgac aagaaccgcc agggcaaggc cgtgatcgtg 540
accggtggcg ccaaccgcgg ccgcatcggc gagatcgtga aggtggagtg ccaccccgg 600
gcgttcaaca ttgcgcacct gaaggacgcg tccggcgccg agttcgccac ccgcgccgcg 660
aacatcttcg tgatcggcaa ggacctgaac aacctgcagg taacggtgcc gaagcagcag 720

eolf-seql

ggcctgcgca tgaacgtgat ccaggagcgc gaggagcgcc tgatcgcggc ggaggccgcg 780
aagaacgcgc cggctcgtgg tgcccgcagg gcccgcaagt ga 822

<210> 23
<211> 249
<212> PRT
<213> Leishmania major

<400> 23

Met Lys Leu Asn Ile Ala Tyr Pro Arg Asn Gly Thr Val Lys Gln Phe
1 5 10 15

Glu Ile Ser Asp Glu Val Leu Arg Arg Val Gln Leu Gln Asp Tyr Arg
20 25 30

Leu Gly Asn Glu Val Asp Gly Ala Ile Phe Gly Ser Glu Phe Lys Gly
35 40 45

Tyr Ile Phe Arg Leu Arg Gly Gly Ser Asp Lys Asp Gly Phe Pro Met
50 55 60

Val Pro Gly Val Leu Ala Ser Ser Arg Val Ser Leu Leu Val Lys Arg
65 70 75 80

Gly Ala Ile Gly Phe Asn Thr Phe Arg Gly Tyr Gln Gly Glu Arg Arg
85 90 95

Arg Lys Asn Val Arg Gly Cys Val Leu Ala Ser Asp Ile Ala Leu Val
100 105 110

Asn Val Thr Ile Ser Lys Val Gly Asp Gln Pro Ile Glu Gly Val Thr
115 120 125

Asp Thr Thr Ala Pro Arg Arg Leu Gly Pro Lys Arg Ala Ser Lys Ile
130 135 140

Arg Lys Leu Phe Asn Leu Ser Arg Thr Glu Asp Val Arg Lys Tyr Val
145 150 155 160

Val Arg Arg Arg Val Val Lys Ser Gly Lys Lys Asp Arg Leu Lys Ala
165 170 175

Pro Lys Ile Gln Arg Leu Ile Thr Pro Arg Val Lys Ala Arg Arg Ala
180 185 190

Lys Lys Ala Lys Asp Ala Ile Ala Lys Val Arg Ala Ser Ala Ala Glu
195 200 205

Arg Arg Glu Tyr Leu Arg Leu Ile Ala Ser Asn Arg Arg Ala Leu Arg
210 215 220

eolf-seql

Gln Arg Asp His Ser Lys Lys His Thr Arg Lys Val His Ala Gln Arg
225 230 235 240

Ala Glu Val Ala Ala Phe Gln Lys Lys
245

<210> 24
<211> 750
<212> DNA
<213> Leishmania major

<400> 24
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gaggtgctcc gccgcgtgca gctgcaggac taccgcctcg gcaacgaggt ggacggcgcc 120
atctttggta gcgagttcaa gggctacatc ttccgcctgc gcggtggctc ggacaaggat 180
ggtttcccga tggtccttgg cgtgcttgcc tccagccgtg tgtcgtgct ggtgaagcgc 240
ggtgcgatcg gcttcaacac cttccgcggc taccagggtg agcgccgccg caagaacggt 300
cgcggtgctg tgctcgcgag cgacattgct ctggtgaacg tgaccatctc caaggctcgt 360
gaccagccga tcgagggtgt gacggacacc acggctcccc gccgtctggg tccgaagcgc 420
gcgagcaaga tccgcaagct cttcaacctg tccgcaccg aagacgtgct gaagtacgtt 480
gttcgccgcc gcgtcgtgaa gagcggcaag aaggaccggc tgaaggcccc gaagatccag 540
cgtctgatca cgccgagggt caaggcccgc cgtgccaaga aggccaagga cgccatcgcc 600
aaggtgcgcg cgtctgccgc tgagcgccgt gactacctgc gccttatcgc ctcgaaccgc 660
cgtgcgctgc gccagcgtga cactccaag aagcacacc ggaaggtgca cgcccagcgc 720
gctgaggtgg cagcattcca gaagaagtaa 750

<210> 25
<211> 419
<212> PRT
<213> Leishmania major

<400> 25
Met Ser His Cys Lys Phe Glu His Pro Arg His Gly His Leu Gly Phe
1 5 10 15

Leu Pro Arg Lys Arg Ser Arg Gln Ile Arg Gly Arg Ala Arg Ala Phe
20 25 30

Pro Lys Asp Asp Ala Thr Gln Lys Pro His Leu Thr Ser Phe Met Val
35 40 45

Phe Lys Ala Gly Met Thr His Ile Val Arg Asp Val Asp Arg Pro Gly
50 55 60

Ser Lys Val Asn Lys Lys Glu Val Val Glu Pro Val Thr Ile Leu Glu
65 70 75 80

eolf-seql

Ala Pro Pro Met Val Ile Val Gly Ile Val Gly Tyr Arg Gln Thr Pro
85 90 95

Val Gly Leu Lys Thr Ile Gly Thr Val Trp Ala His His Thr Ser Val
100 105 110

Glu Phe Arg Arg Arg Tyr Tyr Lys Asn Trp Lys Gln Ser Ala Gln Leu
115 120 125

Ala Phe Ser Arg Gln Lys Gln Phe Ala Asn Thr Lys Glu Gly Lys Val
130 135 140

Ala Glu Ala Arg Thr Leu Asn Ala Phe Ala Lys Lys Ala Ser Val Ile
145 150 155 160

Arg Val Ile Ala His Thr Gln Leu Arg Lys Leu Arg Asn His Arg Val
165 170 175

Gly Val Lys Lys Ala His Val Gln Glu Ile Gln Val Asn Gly Gly Ser
180 185 190

Val Ala Ala Lys Ile Ala Leu Ala Lys Ser Leu Leu Glu Lys Glu Val
195 200 205

Arg Val Asp Ser Val Phe Gln Gln Ser Glu Ala Cys Asp Val Cys Ser
210 215 220

Val Thr Lys Gly His Gly Thr Glu Gly Val Val Lys Arg Trp Gly Val
225 230 235 240

Ala Cys Leu Pro Arg Lys Thr His Arg Gly Leu Arg Lys Val Ala Cys
245 250 255

Ile Gly Ala Trp His Pro Ala Arg Val Met Tyr Thr Val Ala Arg Ala
260 265 270

Gly Gln His Gly Tyr His His Arg Thr Gln Leu Asn Lys Lys Ile Tyr
275 280 285

Gln Ile Gly Arg Ser Val Ala Val Glu Pro Asn Gln Ala Thr Thr Thr
290 295 300

Tyr Asp Leu Thr Ala Lys Thr Ile Thr Pro Met Gly Gly Phe Val Gly
305 310 315 320

Tyr Gly Thr Val Arg Asn Asp Tyr Val Met Leu Lys Gly Ser Val Ser
325 330 335

Gly Pro Arg Arg Arg Val Met Thr Leu Arg Arg Pro Met Ala Pro Gln
340 345 350

eolf-seql

Thr Ser Arg Gln Leu Lys Glu Lys Ile Val Leu Lys Phe Ile Asp Thr
355 360 365

Ser Ser Lys Ile Gly His Gly Arg Phe Gln Thr Lys Lys Glu Lys Asn
370 375 380

Gln Trp Phe Gly Pro Leu Lys Lys Asp Arg Ile Arg Arg Glu Glu Arg
385 390 395 400

Leu Arg Lys Glu Arg Ala Ala Arg Ala Val Glu Arg Lys Ala Lys Ala
405 410 415

Ala Lys Lys

<210> 26
<211> 1260
<212> DNA
<213> Leishmania major

<400> 26
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ccccacctga cgagcttcat ggtgttcaag gccggtatga cgcacattgt gcgtgatgtc 180
gatcgccctg gatcgaaggt gaacaagaag gaagtgggtg agccggtgac gatcctggag 240
gcgcccgcga tgggtattgt cggcattgtg ggctaccgcc aaacgccggt tggcctgaag 300
acgatcggca ccgtgtgggc gcaccacacg agcgtcgagt tccgccgccg ctactacaag 360
aactggaagc agtctgcga actggccttc tcccgccaga agcagtttgc gaacacgaag 420
gagggcaagg tcgccgaggc gcgcacgctg aacgcgttcg cgaagaaggc gtccgtcatc 480
cgctgatcgc cgcacacgca gctgcgcaag cttcgcaacc accgcgtggg cgtgaagaag 540
gcgcacgtgc aggagatcca ggtcaacggc ggcagcgttg cggcgaagat cgcgctggcc 600
aagtcctgc tggagaagga ggtgcgcgtc gactccgtgt tccagcagtc cgaggcgtgc 660
gacgtgtgct ccgtcacgaa aggccacggg acggagggcg tgggtgaagcg ctggggcggtt 720
gcctgcctgc cacgcaagac gcaccgcggg ctgcgcaagg ttgcgtgcat cggcgcgtgg 780
caccctgccc gcgtcatgta cactgtcgcg cgcgccggtc agcacggtta ccaccaccgc 840
acgcagctga acaagaagat ctaccagatc ggccgctccg ttgctgtgga gccgaaccag 900
gcgacgacga cctacgatct gacagccaag acgatcacgc ccatgggtgg cttcgtcggc 960
tacggtacgg tgcgcaacga ctacgtgatg ctgaagggct ccgtgtcttg cccgcgccgc 1020
cgtgtgatga cgctgcgccg cccgatggcg ccgcagacgt cgcgccagct gaaggagaag 1080
atcgtgctga agttcatcga cacgagctcg aagatcggcc acggccgctt ccagacgaag 1140
aaggagaaga accagtgggt cggcccgtc aagaaggacc gcatccgccg cgaggagcgc 1200
ctgcgcaagg agcgcgctgc ccgcgccgtg gagcgcaagg caaaggccgc gaagaagtaa 1260

eof-seql

<210> 27
 <211> 328
 <212> PRT
 <213> Leishmania major

<400> 27

Met Cys Thr Leu Ala Asn Trp Val Arg Ala Ile Ile Lys Lys His Ser
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 Thr Leu Ala His Thr Leu Glu Met Pro Phe Val Lys Val Val Lys Asn
 20 25 30
 Lys Ala Tyr Phe Lys Arg Phe Gln Val Lys Tyr Arg Arg Arg Arg Glu
 35 40 45
 Gly Lys Thr Asp Tyr His Ala Arg Arg Gln Met Val Leu Gln Asp Lys
 50 55 60
 Thr Lys Phe Gly Ser Pro Lys Tyr Arg Leu Val Val Arg Ile Thr Asn
 65 70 75 80
 Lys Asp Ile Ile Ala Gln Ile Val Gln Ala Lys Ile Val Gly Asp Glu
 85 90 95
 Val Val Met Ala Ala Tyr Ala His Glu Leu Pro Ala Phe Gly Ile Glu
 100 105 110
 His Gly Leu Thr Asn Tyr Ala Ala Ala Tyr Ala Thr Gly Leu Leu Leu
 115 120 125
 Ala Arg Arg Thr Leu Ala Lys Leu Gly Ile Ala Asp Lys Phe Gln Gly
 130 135 140
 Ala Lys Glu Ala Asp Gly Ser Tyr Ser Ala Val Arg Thr Lys Lys Asp
 145 150 155 160
 Asp Glu Gly Asp Asp Glu Glu Arg Phe Pro Phe Lys Ala Ile Leu Asp
 165 170 175
 Val Gly Leu Ala Arg Thr Thr Thr Gly Ala Arg Val Phe Gly Val Leu
 180 185 190
 Lys Gly Ala Val Asp Gly Gly Met Ala Val Pro His Arg Pro Asn Arg
 195 200 205
 Phe Pro Gly Tyr Asn Lys Glu Lys Ser Ser Leu Asp Ala Lys Val His
 210 215 220
 Arg Asp Arg Ile Phe Gly Lys His Val Ala Asp Tyr Leu Lys Gln Val
 225 230 235 240

eolf-seql

Lys Glu Glu Ala Ser Ser Asn Pro Asp Glu Lys Cys Val Gln Phe Ser
245 250 255

Lys Tyr Met Ala Ala Lys Val Leu Pro Glu Ser Ile Glu Gly Met Tyr
260 265 270

Lys Lys Ala His Ala Ala Ile Arg Ala Asp Pro Ser Lys Ser Leu Pro
275 280 285

Lys Lys Ala Lys Lys Glu Gly Val Ala His Lys Ser Tyr Lys Thr Lys
290 295 300

Lys Leu Ser Gly Ala Glu Lys Arg Ala Ala Lys Ala Lys Val Ala
305 310 315 320

Ala Ile Arg Glu Arg Leu Gly Lys
325

<210> 28
<211> 987
<212> DNA
<213> Leishmania major

<400> 28
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gtgaagtacc gccgtcgccg cgagggcaag acggactacc acgcgcgccg gcagatggtg 180
ctgcaggaca agacgaagtt cggctcgccc aagtaccgcc ttgttggtcg catcacgaac 240
aaggacatca ttgcgcagat cgtgcaggcg aagatcgtcg gcgacgaggt ggtgatggcc 300
gcgtacgcgc acgagctgcc tgcgttcggc attgagcacg gcctgacaaa ctacgctgct 360
gcgtacgcga ctggctctgct gctggcgcg cgcacgctgg cgaagctggg catcgcgagc 420
aagttccagg gcgcgaagga ggcggacggc tcgtactctg ctgtgcgcac gaagaaggac 480
gacgagggcg acgacgagga gcgctttccg ttcaaggcga tcctggacgt cggccttgcg 540
cgcacgacga ccggcgcccc cgtgttcggc gtgctgaagg gcgcggtgga cggcggtatg 600
gctgtgccgc accgccccaa ccgcttcccc ggctacaaca aggagaagag ctcgctggac 660
gcgaaggtgc accgcgaccg catctttggc aagcacgtgg cggactacct gaagcaggtg 720
aaggaggagg cgagctcgaa ccctgacgag aagtgcgtgc agttctcgaa gtacatggcc 780
gcgaagggtt tgccggagag catcgagggc atgtacaaga aggcgcacgc ggcgatccgc 840
gcggacccgt cgaagtcgct gccgaagaag gcgaagaagg agggcgtcgc gcacaagagc 900
tacaagacga agaagctgag cggcgcgagg aagagggccg ccgcgaaggc gaaggtcgcg 960
gcatccgcg agcgccctcg caagtaa 987

<210> 29
<211> 10

eolf-seql

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<212> DNA
<213> Artificial

<220>
<223> adjuvant

<400> 29
tcaacgttga 10

<210> 30
<211> 14
<212> DNA
<213> Artificial

<220>
<223> adjuvant

<400> 30
gctagcgtta gcgt 14

<210> 31
<211> 33
<212> DNA
<213> Artificial

<220>
<223> primer

<400> 31
cgggatcctt taatggccac cacgtacgag gag 33

<210> 32
<211> 32
<212> DNA
<213> Artificial

<220>
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cactacgaga agttcgagcg catgatcaag gagcacacag agaagttcaa caagaagatg 240
cacgagcact cggagcactt caagcagaag ttcgccgagc tgctggagca gcagaaggct 300
gcgcagtacc catccaaggg gggatcctct agacccatgt ccaccaagta cctcgccgcg 360
tacgctctgg cctccctgag caaggcgtcc ccgtctcagg cggacgtgga ggctatctgc 420

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eolf-seql

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gccagctctg gtgccgctgc tggcgctcact gcttccgctg cgggtgatgc ggctccggct      600
gccgccgccg cgaagaagga cgagcccagag gaggaggccg acgacgacat gggcccctct      660
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gccgctgcca aggaggagcc ggaggagagc gacgaggacg acttcggcat gggcggtctc     1080
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Phe Asn Arg Lys Met Gln Glu Gln Asn Ala Lys Phe Phe Ala Asp Lys
 35 40 45

Pro Asp Glu Ser Thr Leu Ser Pro Glu Met Lys Glu His Tyr Glu Lys
 50 55 60

Phe Glu Arg Met Ile Lys Glu His Thr Glu Lys Phe Asn Lys Lys Met
 65 70 75 80

His Glu His Ser Glu His Phe Lys Gln Lys Phe Ala Glu Leu Leu Glu
 85 90 95

Gln Gln Lys Ala Ala Gln Tyr Pro Ser Lys Gly Gly Ser Ser Arg Pro
 100 105 110

eolf-seql

Met Ser Thr Lys Tyr Leu Ala Ala Tyr Ala Leu Ala Ser Leu Ser Lys
115 120 125

Ala Ser Pro Ser Gln Ala Asp Val Glu Ala Ile Cys Lys Ala Val His
130 135 140

Ile Asp Val Asp Gln Ala Thr Leu Ala Phe Val Met Glu Ser Val Thr
145 150 155 160

Gly Arg Asp Val Ala Thr Leu Ile Ala Glu Gly Ala Ala Lys Met Ser
165 170 175

Ala Met Pro Ala Ala Ser Ser Gly Ala Ala Ala Gly Val Thr Ala Ser
180 185 190

Ala Ala Gly Asp Ala Ala Pro Ala Ala Ala Ala Lys Lys Asp Glu
195 200 205

Pro Glu Glu Glu Ala Asp Asp Asp Met Gly Pro Ser Arg Val Asp Pro
210 215 220

Met Gln Tyr Leu Ala Ala Tyr Ala Leu Val Ala Leu Ser Gly Lys Thr
225 230 235 240

Pro Ser Lys Ala Asp Val Gln Ala Val Leu Lys Ala Ala Gly Val Ala
245 250 255

Val Asp Ala Ser Arg Val Asp Ala Val Phe Gln Glu Val Glu Gly Lys
260 265 270

Ser Phe Asp Ala Leu Val Ala Glu Gly Arg Thr Lys Leu Val Gly Ser
275 280 285

Gly Ser Ala Ala Pro Ala Gly Ala Val Ser Thr Ala Gly Ala Gly Ala
290 295 300

Gly Ala Val Ala Glu Ala Lys Lys Glu Glu Pro Glu Glu Glu Glu Ala
305 310 315 320

Asp Asp Asp Met Gly Pro Val Asp Leu Gln Pro Ala Ala Ala Ala Pro
325 330 335

Ala Ala Pro Ser Ala Ala Ala Lys Glu Glu Pro Glu Glu Ser Asp Glu
340 345 350

Asp Asp Phe Gly Met Gly Gly Leu Phe
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<210> 35

<211> 30

eolf-seql

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<220>
<223> primer

<400> 35
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30

<210> 36
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<220>
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<400> 36
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22

<210> 37
<211> 297
<212> PRT
<213> homo sapiens

<400> 37

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20 25 30

Arg Met Ser Ser Leu Val Gly Pro Thr Gln Ser Phe Phe Met Arg Glu
35 40 45

Ser Lys Thr Leu Gly Ala Val Gln Ile Met Asn Gly Leu Phe His Ile
50 55 60

Ala Leu Gly Gly Leu Leu Met Ile Pro Ala Gly Ile Tyr Ala Pro Ile
65 70 75 80

Cys Val Thr Val Trp Tyr Pro Leu Trp Gly Gly Ile Met Tyr Ile Ile
85 90 95

Ser Gly Ser Leu Leu Ala Ala Thr Glu Lys Asn Ser Arg Lys Cys Leu
100 105 110

Val Lys Gly Lys Met Ile Met Asn Ser Leu Ser Leu Phe Ala Ala Ile
115 120 125

Ser Gly Met Ile Leu Ser Ile Met Asp Ile Leu Asn Ile Lys Ile Ser
130 135 140

His Phe Leu Lys Met Glu Ser Leu Asn Phe Ile Arg Ala His Thr Pro
145 150 155 160

eolf-seql

Tyr Ile Asn Ile Tyr Asn Cys Glu Pro Ala Asn Pro Ser Glu Lys Asn
165 170 175

Ser Pro Ser Thr Gln Tyr Cys Tyr Ser Ile Gln Ser Leu Phe Leu Gly
180 185 190

Ile Leu Ser Val Met Leu Ile Phe Ala Phe Phe Gln Glu Leu Val Ile
195 200 205

Ala Gly Ile Val Glu Asn Glu Trp Lys Arg Thr Cys Ser Arg Pro Lys
210 215 220

Ser Asn Ile Val Leu Leu Ser Ala Glu Glu Lys Lys Glu Gln Thr Ile
225 230 235 240

Glu Ile Lys Glu Glu Val Val Gly Leu Thr Glu Thr Ser Ser Gln Pro
245 250 255

Lys Asn Glu Glu Asp Ile Glu Ile Ile Pro Ile Gln Glu Glu Glu
260 265 270

Glu Glu Thr Glu Thr Asn Phe Pro Glu Pro Pro Gln Asp Gln Glu Ser
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Ser Pro Ile Glu Asn Asp Ser Ser Pro
290 295

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<212> DNA
<213> Cupressus arizonica

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aagatctcag gatcagagct tgcagacatc ttgcgggtcta tgggaagtga agtagacgag 180
gcagagggtca aggccatgat ggaggaggca gacacggatg gtgacgggta tgtagcctg 240
caagagtttg tggatctgaa tattaaggc gctactgtga aggatttgaa gaatgctttc 300
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aaaagcgtgg gcgagccctg caccatcgag gagtctaaga acattattca caacgtcgac 420
aagaatgggg atggacttat taatgttgaa gaatttcaga caatgatgac aagtgaaatg 480
actgataaga gcaaatga 498

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<211> 1044
<212> DNA
<213> Cupressus arizonica

<400> 39

eolf-seq1

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<210> 40
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<213> Cupressus arizonica

<400> 40

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Lys Phe Asp Ala Asn Gly Asp Gly Lys Ile Ser Gly Ser Glu Leu Ala
35 40 45

Asp Ile Leu Arg Ser Met Gly Ser Glu Val Asp Glu Ala Glu Val Lys
50 55 60

Ala Met Met Glu Glu Ala Asp Thr Asp Gly Asp Gly Tyr Val Ser Leu
65 70 75 80

Gln Glu Phe Val Asp Leu Asn Ile Lys Gly Ala Thr Val Lys Asp Leu
85 90 95

self-seq1

Lys Asn Ala Phe Lys Val Phe Asp Arg Asp Cys Asn Gly Thr Ile Ser
100 105 110

Pro Ala Glu Leu Cys Glu Thr Leu Lys Ser Val Gly Glu Pro Cys Thr
115 120 125

Ile Glu Glu Ser Lys Asn Ile Ile His Asn Val Asp Lys Asn Gly Asp
130 135 140

Gly Leu Ile Asn Val Glu Glu Phe Gln Thr Met Met Thr Ser Glu Met
145 150 155 160

Thr Asp Lys Ser Lys
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<210> 41

<211> 347

<212> PRT

<213> Cupressus arizonica

<400> 41

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20 25 30

Thr Met Gly Gly Lys Gly Gly Glu Ile Tyr Thr Val Thr Ser Ser Glu
35 40 45

Asp Asn Pro Val Asn Pro Thr Pro Gly Thr Leu Arg Tyr Gly Ala Thr
50 55 60

Arg Glu Lys Ala Leu Trp Ile Ile Phe Ser Gln Asn Met Asn Ile Lys
65 70 75 80

Leu Gln Met Pro Leu Tyr Val Asn Gly Tyr Lys Thr Ile Asp Gly Arg
85 90 95

Gly Ala Asp Val His Leu Gly Asn Gly Gly Pro Cys Leu Phe Met Arg
100 105 110

Lys Ala Ser His Val Ile Leu His Gly Leu His Ile His Gly Cys Asn
115 120 125

Thr Ser Val Leu Gly Asp Val Leu Val Ser Glu Ser Ile Gly Val Glu
130 135 140

Pro Val His Ala Gln Asp Gly Asp Ala Ile Thr Met Arg Asn Val Thr
145 150 155 160

Asn Ala Trp Ile Asp His Asn Ser Leu Ser Asp Cys Ser Asp Gly Leu

eolf-seql
170

165

175

Ile Asp Val Thr₁₈₀ Leu Gly Ser Thr Gly₁₈₅ Ile Thr Ile Ser Asn₁₉₀ Asn His

Phe Phe Asn₁₉₅ His His Lys Val Met₂₀₀ Leu Leu Gly His Asp₂₀₅ Asp Thr Tyr

Asp Asp₂₁₀ Asp Lys Ser Met Lys₂₁₅ Val Thr Val Ala Phe₂₂₀ Asn Gln Phe Gly

Pro Asn Ala Gly Gln Arg₂₃₀ Met Pro Arg Ala Arg₂₃₅ Tyr Gly Leu Val His₂₄₀

Val Ala Asn Asn₂₄₅ Asn Tyr Asp Gln Trp Asn₂₅₀ Ile Tyr Ala Ile Gly₂₅₅ Gly

Ser Ser Asn Pro₂₆₀ Thr Ile Leu Ser Glu₂₆₅ Gly Asn Ser Phe Thr₂₇₀ Ala Pro

Asn Glu Ser₂₇₅ Tyr Lys Lys Glu Val₂₈₀ Thr Lys Arg Ile Gly₂₈₅ Cys Glu Thr

Thr Ser₂₉₀ Ala Cys Ala Asn Trp₂₉₅ Val Trp Arg Ser Thr₃₀₀ Arg Asp Ala Phe

Thr Asn Gly Ala Tyr Phe₃₁₀ Val Ser Ser Gly Lys₃₁₅ Ala Glu Asp Thr Asn₃₂₀

Ile Tyr Asn Ser Asn₃₂₅ Glu Ala Phe Lys Val₃₃₀ Glu Asn Gly Asn Ala₃₃₅ Ala

Pro Gln Leu Thr₃₄₀ Gln Asn Ala Gly Val₃₄₅ Val Ala

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<213> human

<400> 42

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Glu Met Lys₃₅ Glu Leu Leu His Lys₄₀ Glu Leu Pro Ser Phe Val Gly Glu

Lys Val Asp Glu Glu Gly Leu₅₅ Lys Lys Leu Met Gly₆₀ Ser Leu Asp Glu

eolf-seql

Asn Ser Asp Gln Gln Val Asp Phe Gln Glu Tyr Ala Val Phe Leu Ala
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Leu Ile Thr Val Met Cys Asn Asp Phe Phe Gln Gly Cys Pro Asp Arg
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Pro

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agcctggatg agaacagtga ccagcaggtg gacttccagg agtatgtctgt tttcctggca 240
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<213> artificial

<220>
<223> primer

<400> 44
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<210> 45
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<212> DNA
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<220>
<223> primer

<400> 45
aacttaagca gggtcggtct gggcag 26

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<212> DNA
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eolf-seql

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<211> 412
<212> PRT
<213> artificial

<220>
<223> Q
<400> 47

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Arg Pro Leu Ala Thr Pro Arg Ser Ala Lys Lys Ala Val Arg Lys Ser
35 40 45

Gly Ser Lys Ser Ala Lys Cys Gly Leu Ile Phe Pro Val Gly Arg Val

cof-seql
60

50

55

Gly Gly Met Met Arg Arg Gly Gln Tyr Ala Arg Arg Ile Gly Ala Ser
65 70 75 80

Gly Ala Pro Arg Ile Ser Glu Phe Ser Val Lys Ala Ala Ala Gln Ser
85 90 95

Gly Lys Lys Arg Cys Arg Leu Asn Pro Arg Thr Val Met Leu Ala Ala
100 105 110

Arg His Asp Asp Asp Ile Gly Thr Leu Leu Lys Asn Val Thr Leu Ser
115 120 125

His Ser Gly Val Val Pro Asn Ile Ser Lys Ala Met Ala Lys Lys Lys
130 135 140

Gly Gly Lys Lys Gly Lys Ala Thr Pro Ser Ala Pro Glu Phe Gly Ser
145 150 155 160

Ser Arg Pro Met Ser Thr Lys Tyr Leu Ala Ala Tyr Ala Leu Ala Ser
165 170 175

Leu Ser Lys Ala Ser Pro Ser Gln Ala Asp Val Glu Ala Ile Cys Lys
180 185 190

Ala Val His Ile Asp Val Asp Gln Ala Thr Leu Ala Phe Val Met Glu
195 200 205

Ser Val Thr Gly Arg Asp Val Ala Thr Leu Ile Ala Glu Gly Ala Ala
210 215 220

Lys Met Ser Ala Met Pro Ala Ala Ser Ser Gly Ala Ala Ala Gly Val
225 230 235 240

Thr Ala Ser Ala Ala Gly Asp Ala Ala Pro Ala Ala Ala Ala Lys
245 250 255

Lys Asp Glu Pro Glu Glu Glu Ala Asp Asp Asp Met Gly Pro Ser Arg
260 265 270

Val Asp Pro Met Gln Tyr Leu Ala Ala Tyr Ala Leu Val Ala Leu Ser
275 280 285

Gly Lys Thr Pro Ser Lys Ala Asp Val Gln Ala Val Leu Lys Ala Ala
290 295 300

Gly Val Ala Val Asp Ala Ser Arg Val Asp Ala Val Phe Gln Glu Val
305 310 315 320

Glu Gly Lys Ser Phe Asp Ala Leu Val Ala Glu Gly Arg Thr Lys Leu
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eof-seq1
330